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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,872	03/03/2004	Masatoshi Akagawa	300.1147	3133

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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

NGUYEN, LAM S

ART UNIT	PAPER NUMBER
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2853

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/790,872

Applicant(s)

AKAGAWA ET AL.

Examiner

LAM S. NGUYEN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,18-25 and 33-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-36 is/are allowed.
- 6) ☒ Claim(s) 1,2,9,18,19 and 25 is/are rejected.
- 7) ☒ Claim(s) 4-8 and 20-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

The indicated allowability of claim 1 and 18 is withdrawn in view of the newly discovered reference(s) to Tanaka (US 5995717). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 9, 18, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhagat (US 3580670) in view of Tanaka (US 5995717).

Regarding to claims 1, 18:

Bhagat discloses a pattern drawing apparatus for forming exposure patterns, that have a mirror image relationship to each other with respect to a substrate, on both sides of the substrate (*FIG. 2: The images F' are formed on both sides of the substrate 71*), comprising:

maskless exposure means for forming the exposure patterns on both sides of the substrate by masklessly exposing both sides of the substrate in accordance with prescribed data (*FIG. 2: The exposure images F' on the drums 59 and 66 are used to form images on both sides of the substrate*).

Bhagat, however, does not disclose detecting a displacement from the mirror image relationship of the exposure patterns by using a test substrate on both sides of which the exposure patterns are formed by the maskless exposure means and correcting means for correcting

exposure data based on the displacement detected by the detecting means so that the mirror image relationship will be maintained between the exposure patterns when the exposure patterns are formed on both sides of the substrate by maskless exposure by the maskless exposure means in accordance with the exposure data.

Tanaka discloses a printing apparatus for forming images including detecting a displacement from images and correcting means for correcting exposure data based on the displacement detected by the detecting means so that the image relationship will be maintained (*Abstract*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time invention was made to modify the printing process disclosed by Bhagat to include detecting the displacement of the images and correcting printing data accordantly as disclosed by Tanaka. The motivation for doing so would have been to form a high quality image as taught by Tanaka (*Abstract*).

- **Bhagat also discloses the following claimed invention:**

Regarding to claims 9, 25: wherein the exposure patterns are lead patterns of a leadframe member (This claim limitation is considered as an intended use that uses the above pattern drawing apparatus for forming lead patterns of a leadframe member. As a result, the claim limitation does not carry patentable weight).

2. Claims 2 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhagat (US 3580670) in view of Tanaka (US 5995717), as applied to claims 1 and 18, and further in view of Umeda et al. (US 6302015).

Bhagat, as modified, discloses the claimed invention as discussed above except wherein the maskless exposure means includes exposure heads arranged facing each other, and wherein the substrate is placed with each side thereof facing a corresponding one of the exposure heads so that both sides of the substrate are masklessly exposed.

Umeda et al. discloses an apparatus for printing on both sides of an image printing medium by maskless exposure means including exposure heads arranged facing each other, wherein the printing medium (substrate) is placed with each side thereof facing a corresponding one of the exposure heads so that both sides of the substrate are masklessly exposed (*FIG. 5*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time invention was made to modify Bhagat's apparatus, as modified, to arrange the exposure heads to be facing each other respect to the printing medium (substrate) as disclosed by Umeda et al.

The motivation for doing so would have been to simultaneously transfer images onto both sides of the printing medium as taught by Umeda et al. (*column 9, lines 14-19*).

Allowable Subject Matter

3. Claims 33-36 are allowed. Claims 4-8 and 20-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding to claims 4, 20: The primary reasons for the indication of the allowability of the claims is the inclusions therein, in combination as currently claimed, of the limitation that wherein the detection step includes a developing step for developing both sides of the test substrate after the test exposure step, and wherein the displacement from the mirror image

relationship is detected by reading the exposure patterns that are formed on both sides of the test substrate in the developing step

is neither disclosed nor taught by the cited prior art of record, alone or in combination.

Regarding to claim 33: The primary reasons for the indication of the allowability of the claims is the inclusions therein, in combination as currently claimed, of the limitation that image capturing means for capturing images on the test substrate from one side thereof after the exposure patterns have been formed thereon by the developing means, control means for controlling the test substrate in such a manner as to block light during the exposure by the exposure means and to transmit light during the image capturing by the image capturing means, and detecting means for detecting a displacement from the mirror image relationship of the test exposure patterns on the test substrate, based on the images captured by the image capturing means is neither disclosed nor taught by the cited prior art of record, alone or in combination.

Claims 5-8, 21-24, and 34-36 are allowed because they depend directly/indirectly on claim 4, 20, or 33, respectively.

Response to Arguments

The indicated allowability of claim 1 and 18 is withdrawn in view of the newly discovered reference(s) to Tanaka (US 5995717). Rejections based on the newly cited reference(s) as above.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S. NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D. MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Lam Son Nguyen', is positioned above the printed name.

LAM SON NGUYEN